H. P. ROBERTS.

SELF SEALING BOTTLE.

No. 525,364. Patented Sept. 4, 1894.

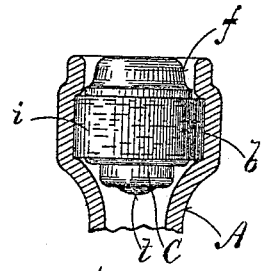

Fig. 1.

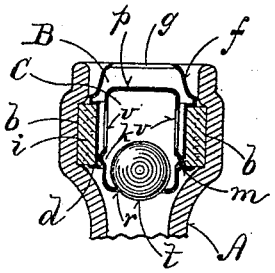

Fig. 2.

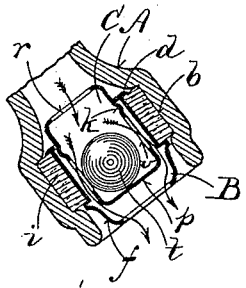

Fig. 3.

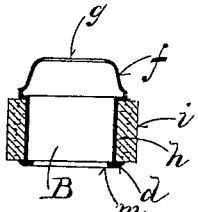

Fig. 4.

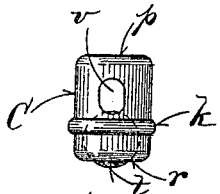

Fig. 5.

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HENRY P. ROBERTS, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO WILLIAM H. QUICK AND LEWIS H. GREEN, OF SAME PLACE.

SELF-SEALING BOTTLE.

SPECIFICATION forming part of Letters Patent No. 525,364, dated September 4, 1894.

Application filed May 31, 1894. Serial No. 513,053. (No model.)

To all whom it may concern:

Be it known that I, HENRY P. ROBERTS, of Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Self-Sealing Bottles, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional view of the neck or mouth of a bottle provided with my improved device, which is shown in elevation; Fig. 2 a vertical transverse section of the same; Fig. 3 a like view showing the position of the parts when the bottle is inverted; Fig. 4 a vertical section showing details of construction; and Fig. 5 an elevation of the inner tube containing the valve-seat.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to a device for preventing the refilling of bottles after they have once been emptied without so destroying either the neck or the sealing device that it will be readily discovered by the purchaser.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation:

In the drawings, A represents the bottle-neck which at its mouth is swiveled forming an annular groove, *b*.

A metallic cylinder, B, preferably constructed of aluminum is flanged at, *d*, (see Fig. 4) and has a cap-piece, *f*, overlapping its opposite end, said cap and flange forming an annular groove, *h*, which holds a ring, *i*, of cork. The cap-piece, *f*, has a mouth, *g*, of less diameter than the cylinder. Within the cylinder, B, a supplemental cylinder, C, is inserted. Said cylinder, C, has a bead, *k*, which engages and rests on a lip, *m*, reamed inward from the cylinder, B. One end, *p*, of the cylinder, C, is closed. Said cylinder is greater in diameter than the mouth, *g*, of the main cylinder or body, B, which prevents the inner cylinder from being withdrawn through said mouth. The opposite end of the inner cylinder, C, is open forming a valve-seat, *r*, which a ball-valve, *t*, engages. The side walls of the cylinder, C, are provided with ports, *v*.

In constructing the device the valve-cylinder, C, is dropped into the cylinder, B, and rests as shown, with its bead engaging the shoulder, *m*. The mouth of the outer cylinder is then reamed inward preventing the inner cylinder from being withdrawn. The cork, *i*, is soaked so that it will swell and is forced into the annular groove, *b*, in the bottle neck, holding the parts securely in said neck and preventing their withdrawal as it is practically impossible to insert an implement in the mouth, *g*, and grasp any portion of the device with sufficient force to withdraw it without destroying some parts thereof. This groove, *b*, may be located at any distance from the mouth of the bottle.

In the use of my improvement, when the bottle is in its normal vertical position, the seat, *r*, is closed by the ball-valve preventing the insertion of liquor into the bottle. As soon as the bottle is inverted the ball falls away from the seat against the top, *p*, of the cylinder, C, so that the liquid in the bottle may pass through the ports, *v*, in the direction indicated by arrows in Fig. 3.

Having thus explained my invention, what I claim is—

1. The combination with the outer cylinder having a mouth in its outer end and means for securing it in the bottle neck, of the inner cylinder having its outer end closed; an open valve-seat in its lower end and ports in its side wall; a ball-valve in said inner cylinder and devices for preventing the withdrawal of said cylinder, all being arranged to operate substantially as set forth.

2. The combination with the bottle, A, provided with the groove, *b*, of a metallic cylinder, having an open outer end a flexible projection thereon adapted to enter said groove and secure the cylinder therein, an inner cyl-

inder secured in said first cylinder and provided with ports and a valve-seat and a ball-valve for closing said seat.

3. The combination with the bottle, A, having the groove, *b*, of the cylinder, B, provided with the mouth, *g*; the flexible attaching-ring, *i*, thereon disposed in said groove; the cylinder, C, within the cylinder, B, having the closed end, *p*, ports, *v*, and valve-seat, *r*, and the ball-valve, *t*, engaging said seat all being arranged to operate substantially as described.

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